The mucus contained in saliva in expectorated fluids, and in that from the oyster, were first examined; but since nitrate of silver and acetate of lead, which have been supposed to detect mucus, were found to act principally on the salts contained in them, it became necessary to employ other means for the removal of the salts; and the voltaic apparatus was applied for the purpose of extracting the alkalies at one pole, and the acids at the opposite. But there occurred a phenomenon that was wholly unexpected; as a considerable coagulation of albumen took place at the negative pole, which Mr. Brande (at the suggestion of Mr. Davy) is inclined to ascribe to the separation of alkali with which it was combined, and to which its solubility was owing.

It is observed, in confirmation, that when an egg is boiled for some time in water, the liquid becomes alkaline to tests, and still deposits, by electrization, a small quantity of albumen, which the alkali retains in solution.

The coagulation of albumen by acids is also ascribed to their superior affinity for the alkali.

For discovering the nature of the saline ingredients, the water in which some white of egg had been boiled and macerated, was electrified by a powerful battery, through the medium of a cup of water on each side. After the process had continued for one hour, the fluids were examined; that on the negative side contained a quantity of soda nearly pure, and that on the positive side a small quantity of albumen, with a little muriatic acid, but not enough to saturate the alkali.

The same means of analytic investigation being applied to other fluids, detected larger quantities of albumen than were discoverable by heat alone; as in saliva, in the mucus from the oyster, the mucus from the trachea, in bile, in milk, and in the liquor of Amnios: and hence the author is led to doubt whether mucus may not be a compound of albumen, either with muriate of soda or with excess of soda.

Hints on the Subject of animal Secretions. *By* Everard Home, *Esq. F.R.S.* *Communicated by the Society for the Improvement of Animal Chemistry.* Read June 22, 1809. [*Phil. Trans.* 1809, *p.* 385.]

The separation, by electric powers, of substances chemically united, suggests the possibility, that since the same power is known to exist in the torpedo and electrical eel, it might be the means by which secretion in all animals is effected.

Since in these fish the abundance of nerves connected with the electrical organs proves that this power resides in them, and since the arrangement of many nerves in animal bodies has evidently no connexion with sensation, it seems not improbable that these may answer the purpose of supplying and regulating the organs of secretion.

With a view to determine what changes could be produced in the blood similar to secretion, Mr. Brande applied the power of twenty-

four pair of four-inch plates of copper and zinc to blood, and extracted acid and alkali at the opposite wires.

A second experiment was made, with similar results, on blood still fluid, in the vein of an animal just killed.

A third experiment was made upon serum, with 120 plates highly charged, with the same result.

A fourth experiment was conducted in a similar manner, with 12 pair of plates, with similar results.

In a fifth experiment, 30 pair of plates, very weakly charged, also extracted alkali and acid from serum exposed to them.

Since powers so weak are capable of separating the constituent parts of blood, it is suggested that the weaker powers existing in animals may produce the same effect, and thus occasion all the different secretions, and modify albumen into the states of the different animal solids.

On the comparative Influence of Male and Female Parents on their Offspring. By Thomas Andrew Knight, *Esq. F.R.S. In a Letter to the Right Hon. Sir* Joseph Banks, *Bart. K.B. P.R.S.* Read June 22, 1809. [*Phil. Trans.* 1809, *p.* 392.]

During the very extensive series of Mr. Knight's endeavours to improve the varieties of fruit-trees, he has also been occupied in making correspondent experiments on the breeding of animals, and has always paid attention to the strong analogy which universally subsists between plants and animals in most points relating to generation.

Although the author's experiments have extended to many different species of fruit-trees, yet the greatest number, and those under the most favourable circumstances, were upon apple-trees. But as the results were all in unison, the instances here adduced are from the apple alone.

Linnæus conceived the character of the *male* to predominate in the exterior both of plants and animals: but Mr. Knight's observations have led him to form a different conclusion; for he remarks, that seedling plants and the young of animals inherit much more of the character of the *female*.

Seeds from cultivated apple-trees, impregnated by the Siberian crab, produced larger fruit than those from the crab impregnated by stamina from the cultivated fruit; but the quality and flavour of the fruit appeared to inherit, in a greater degree, the qualities of the male.

In consequence of the frequent intermixtures that have taken place in the breeding of domesticated animals, there is often little resemblance to either parent; but it is observed, that the dimensions of the offspring are regulated principally by those of the female, and that a corresponding length of legs appears especially necessary for accompanying the parent in flight. But unless the male parent be proportionally strong, the legs of the offspring may be too long in